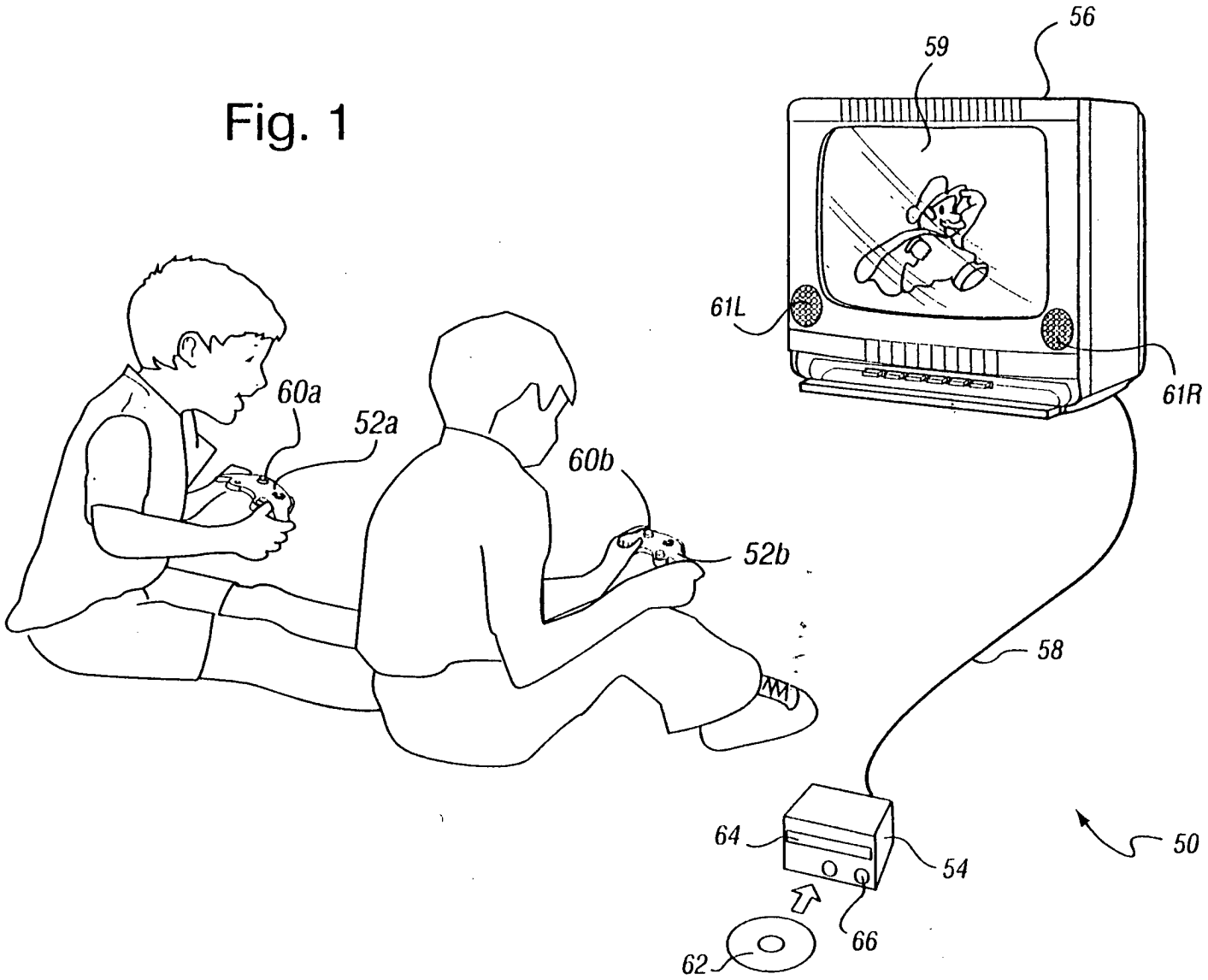
09722760 "TT280

Fig. 1



00827F 28E2260

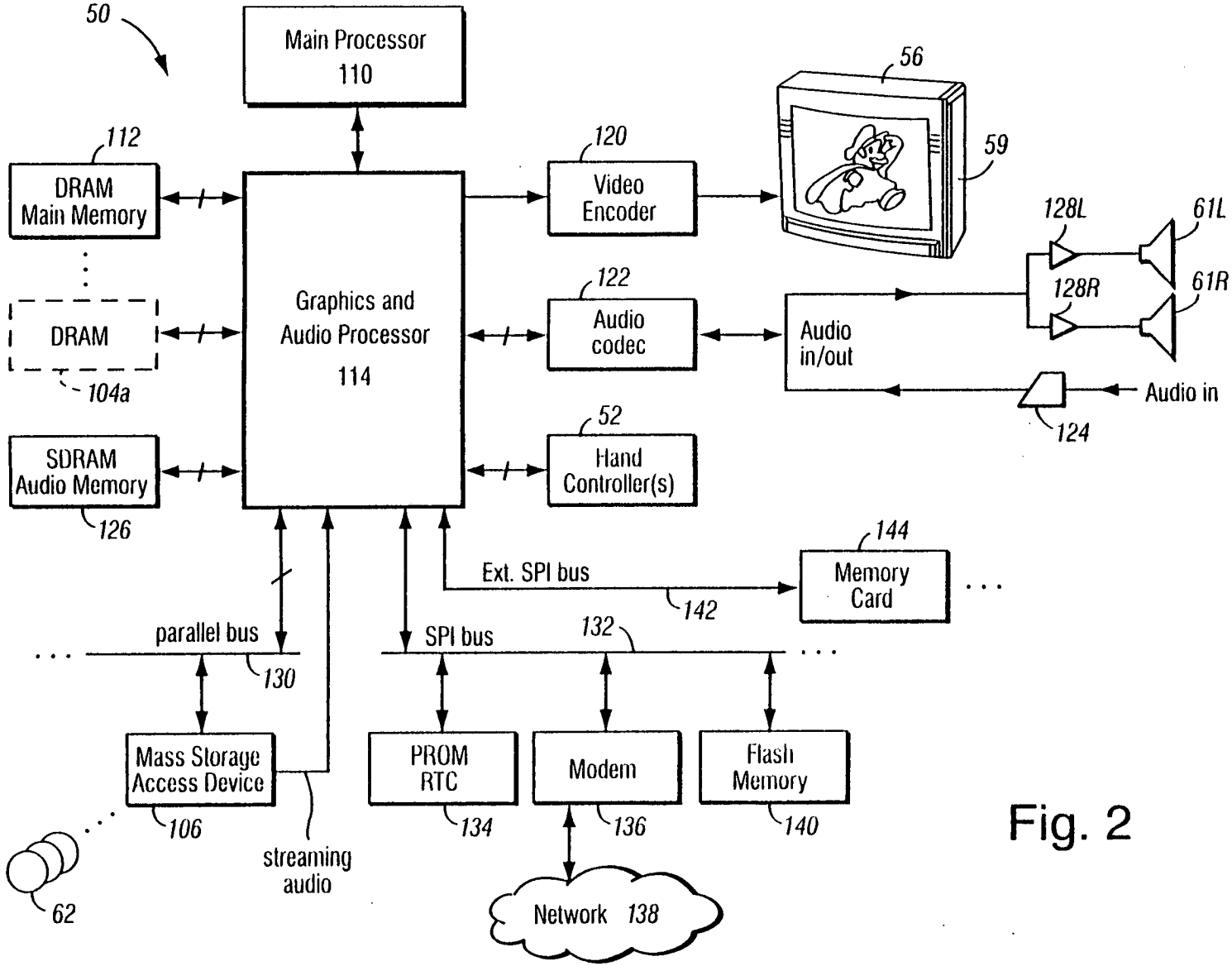
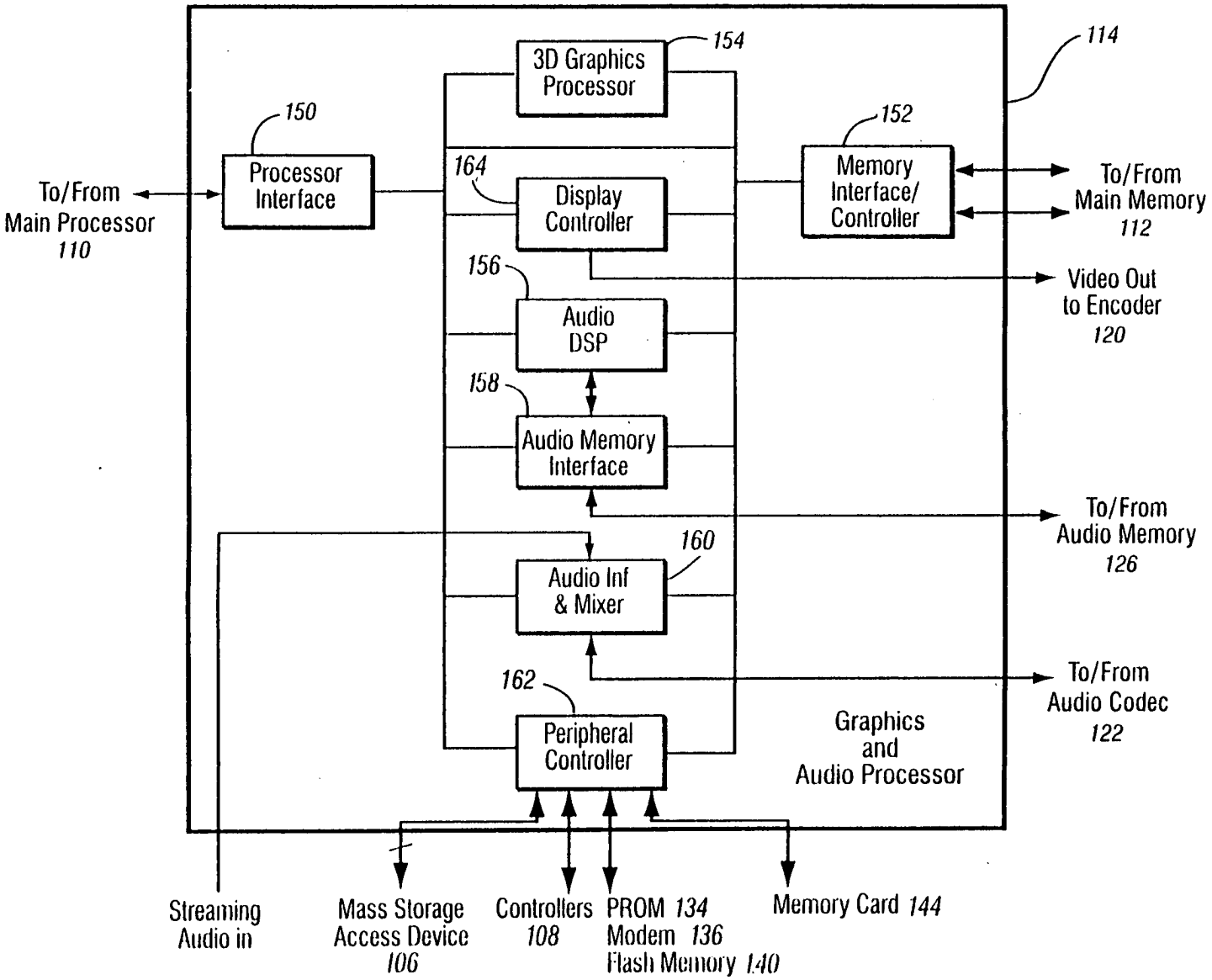


Fig. 2

H:GKC:723-670-Fig. 2.ai

Fig. 3


3D Graphics Processor
154
114
150
Processor Interface
152
Memory Interface/ Controller
To/From Main Processor 110
164
Display Controller
To/From Main Memory 112
156
Audio DSP
Video Out to Encoder 120
158
Audio Memory Interface
To/From Audio Memory 126
160
Audio Inf & Mixer
162
To/From Audio Codec 122
Peripheral Controller
Graphics and Audio Processor
Streaming Audio in
Mass Storage Access Device 106
Controllers 108
PROM 134
Modem 136
Flash Memory 140
Memory Card 144

0082TT* 28E2260

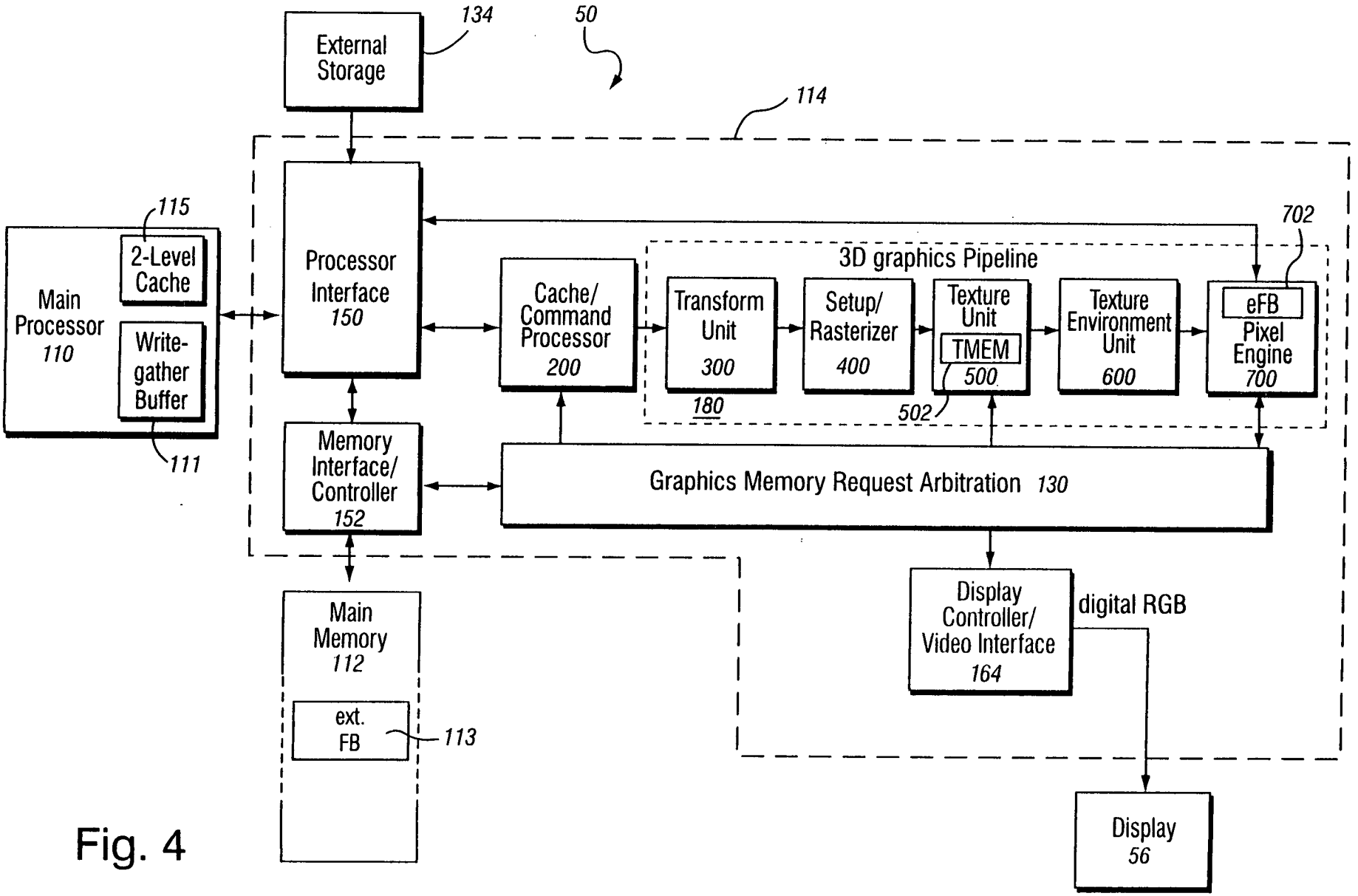


Fig. 4

DOCKET NO. 723-670

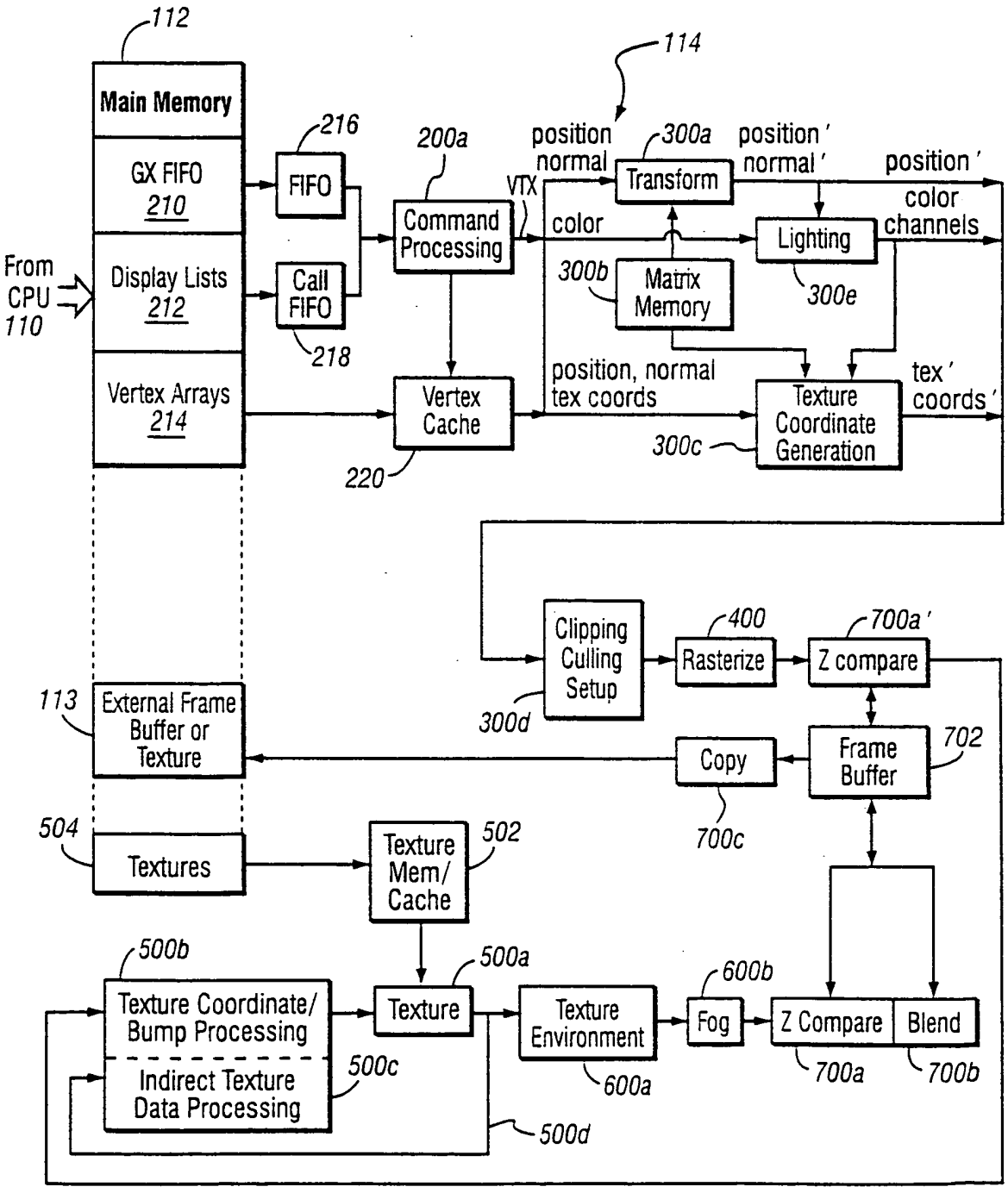
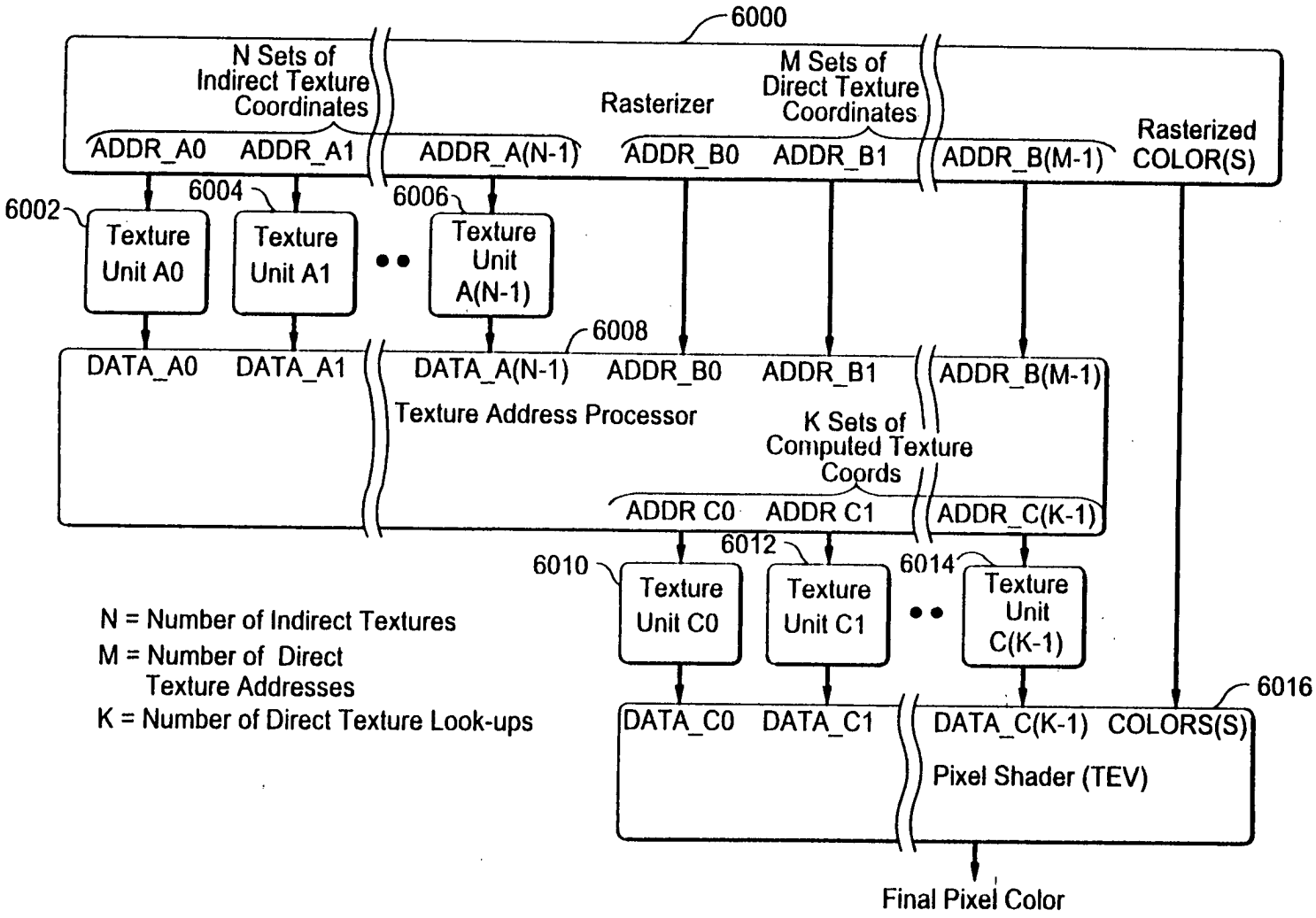


Fig. 5 EXAMPLE GRAPHICS PROCESSOR FLOW



Logical Block Diagram of Indirect Texture Processing

Fig. 6

H/joy/723-849-F 6.dwg

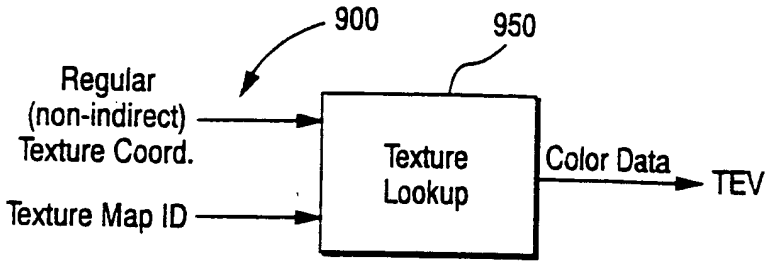


Fig. 7A

REGULAR TEXTURE LOOKUP

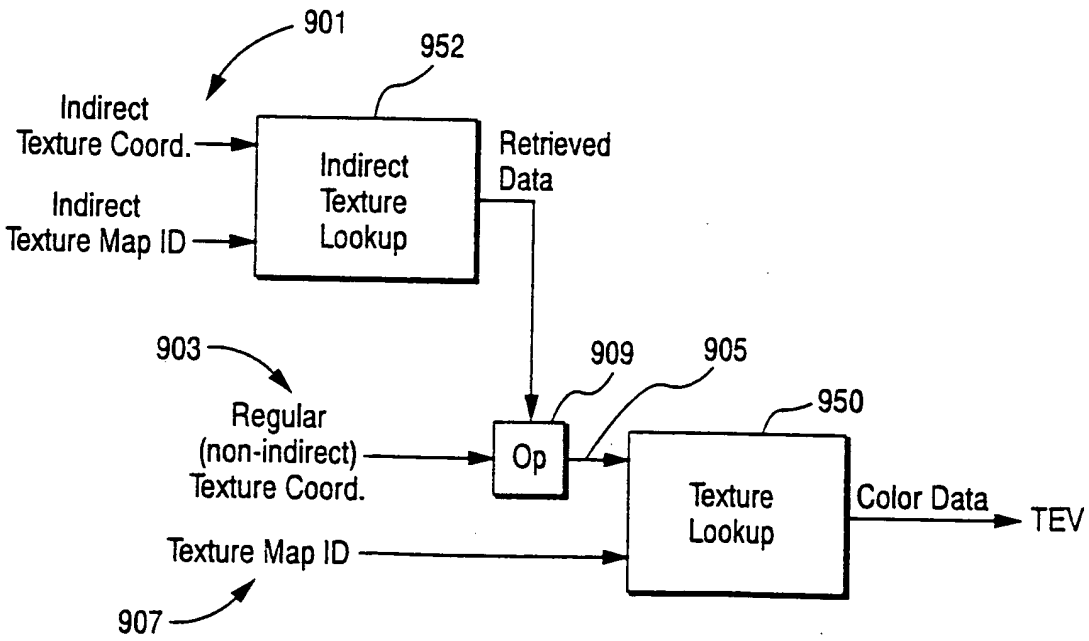
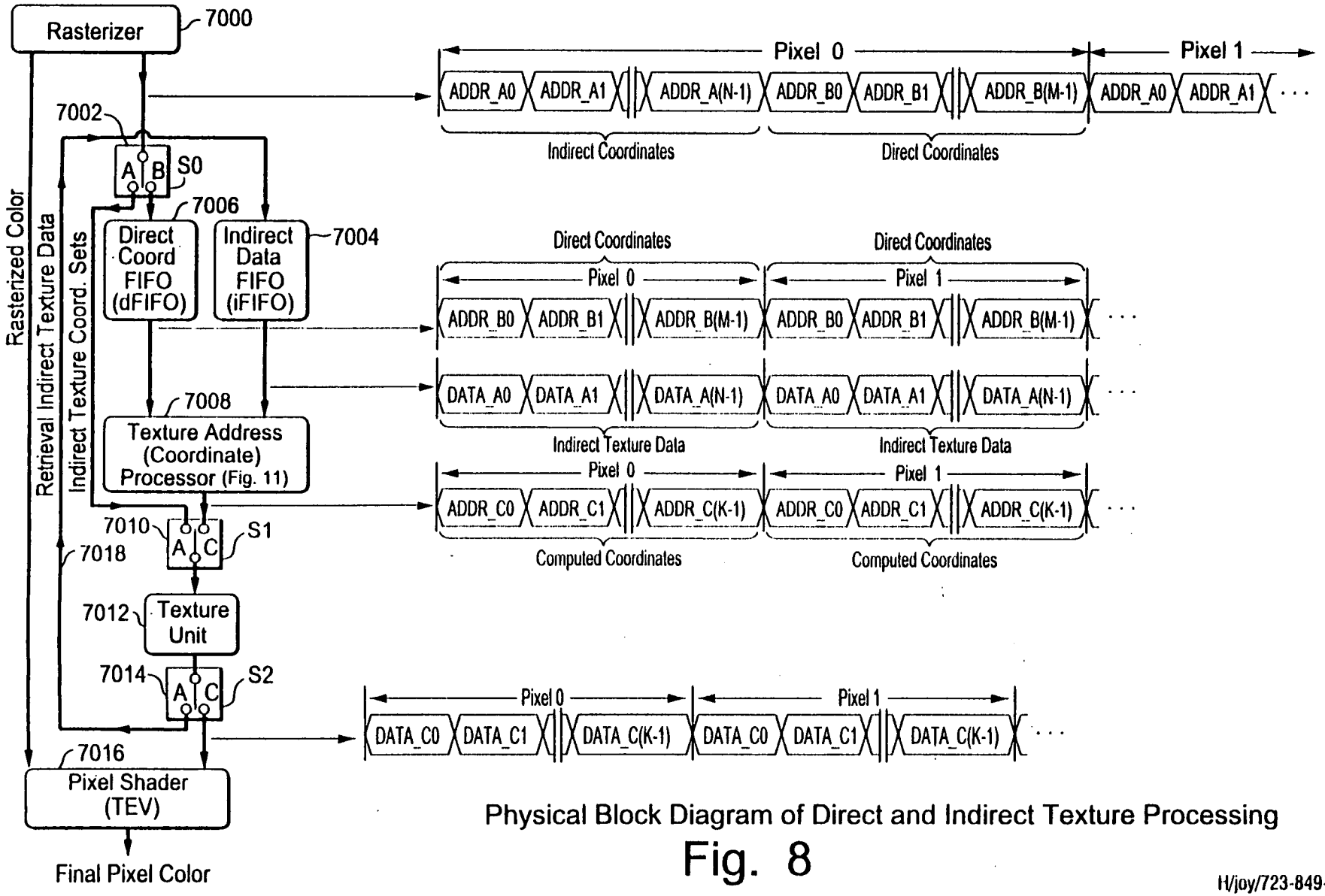


Fig. 7B

INDIRECT TEXTURE LOOKUP



Physical Block Diagram of Direct and Indirect Texture Processing

Fig. 8

H/joy/723-849-F 7.dwg

09/520,800 - 7/20/00

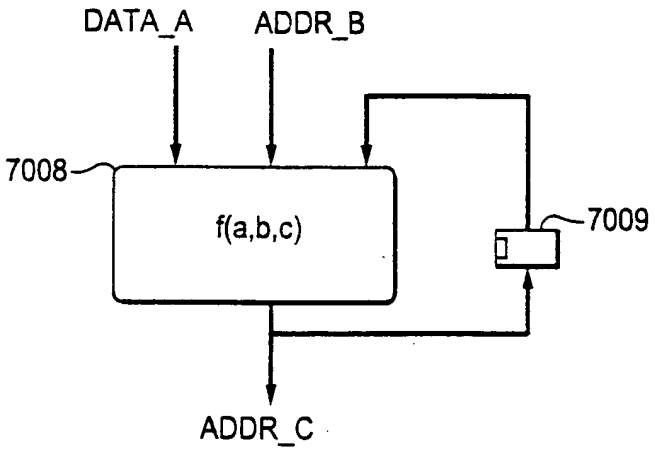


Fig. 9

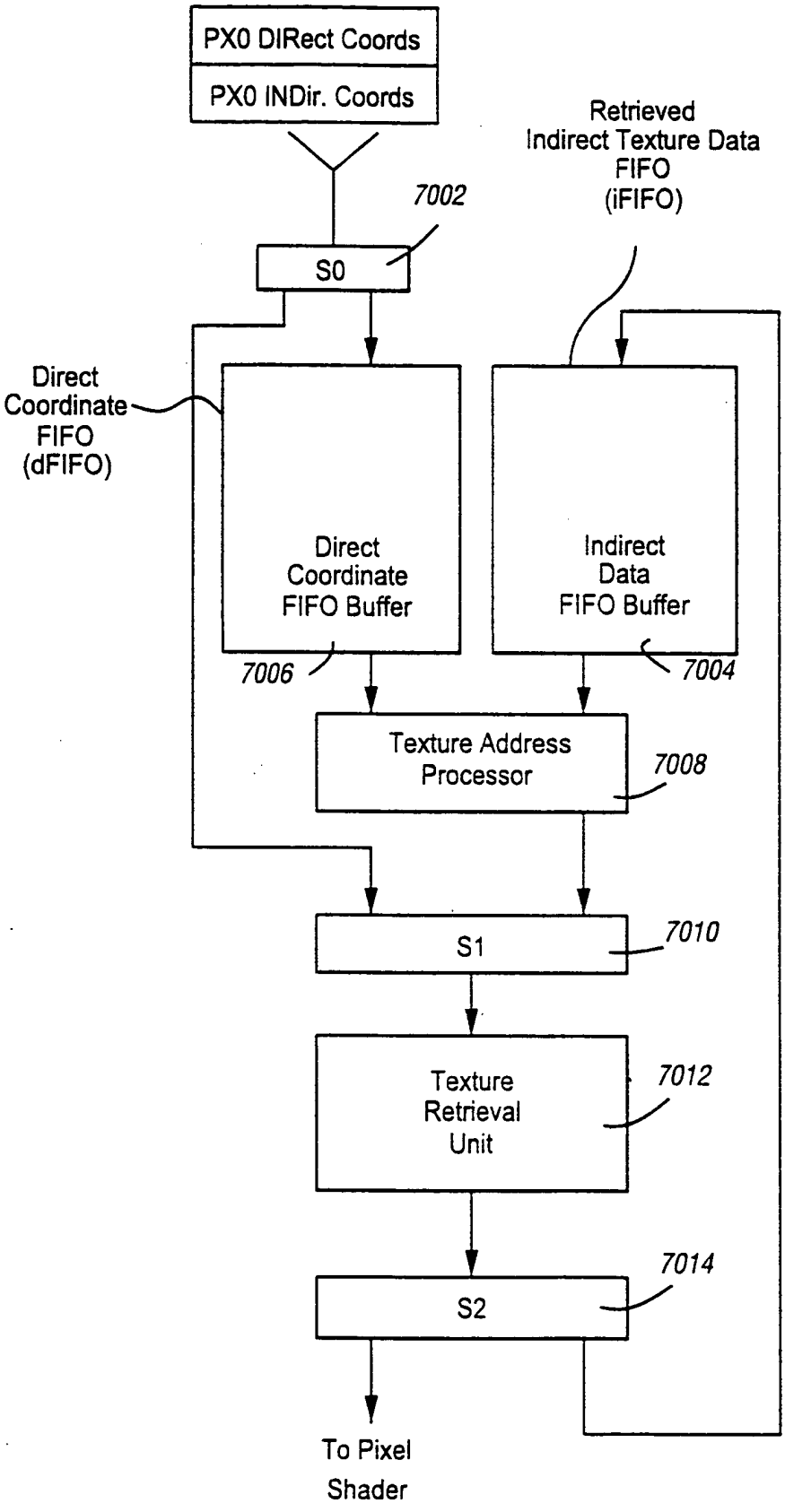


Fig. 10A

H/joy/723-849-Fig 10A.dwg

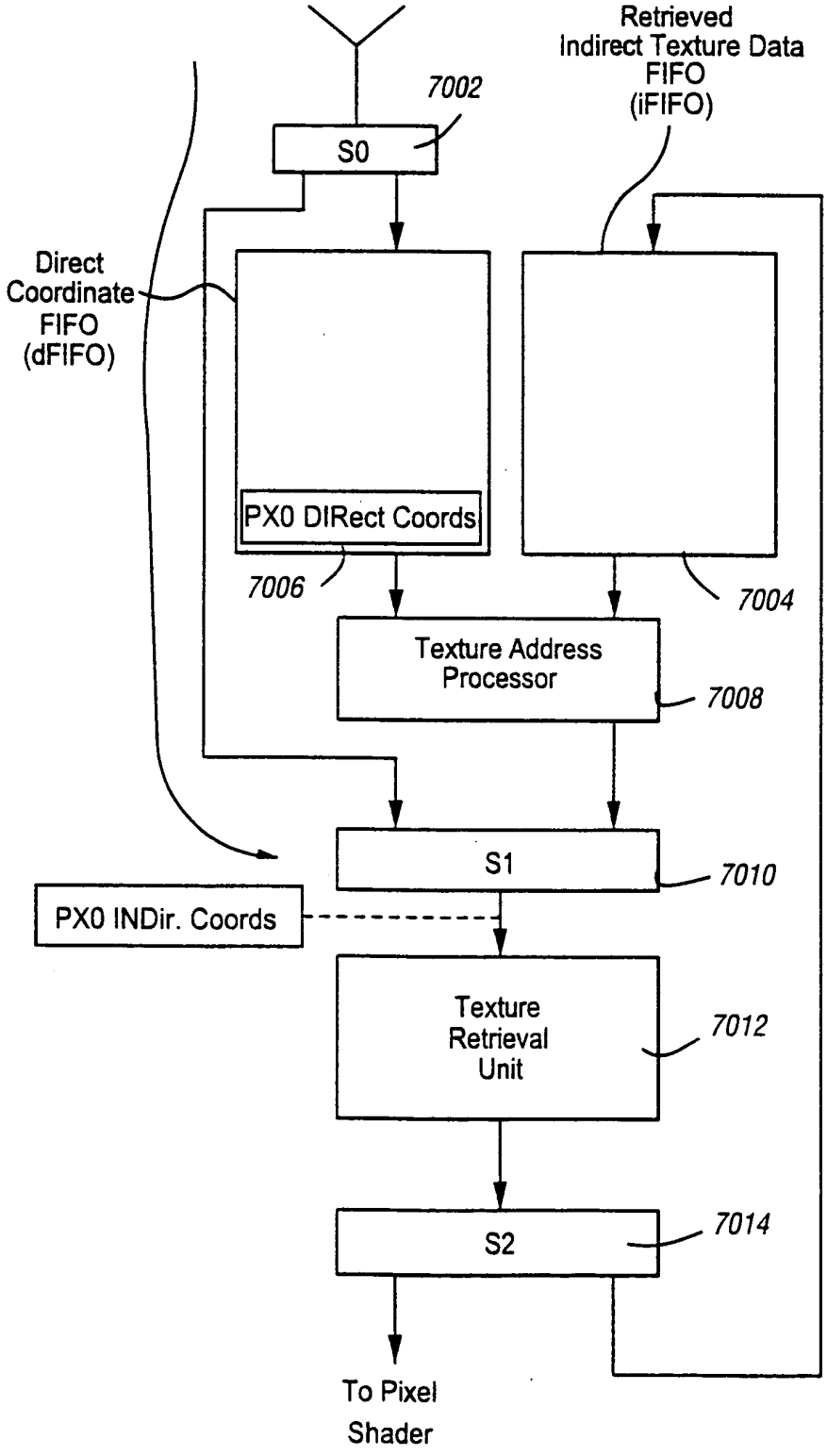


Fig. 10B

H/joy/723-849-Fig 10B.dwg

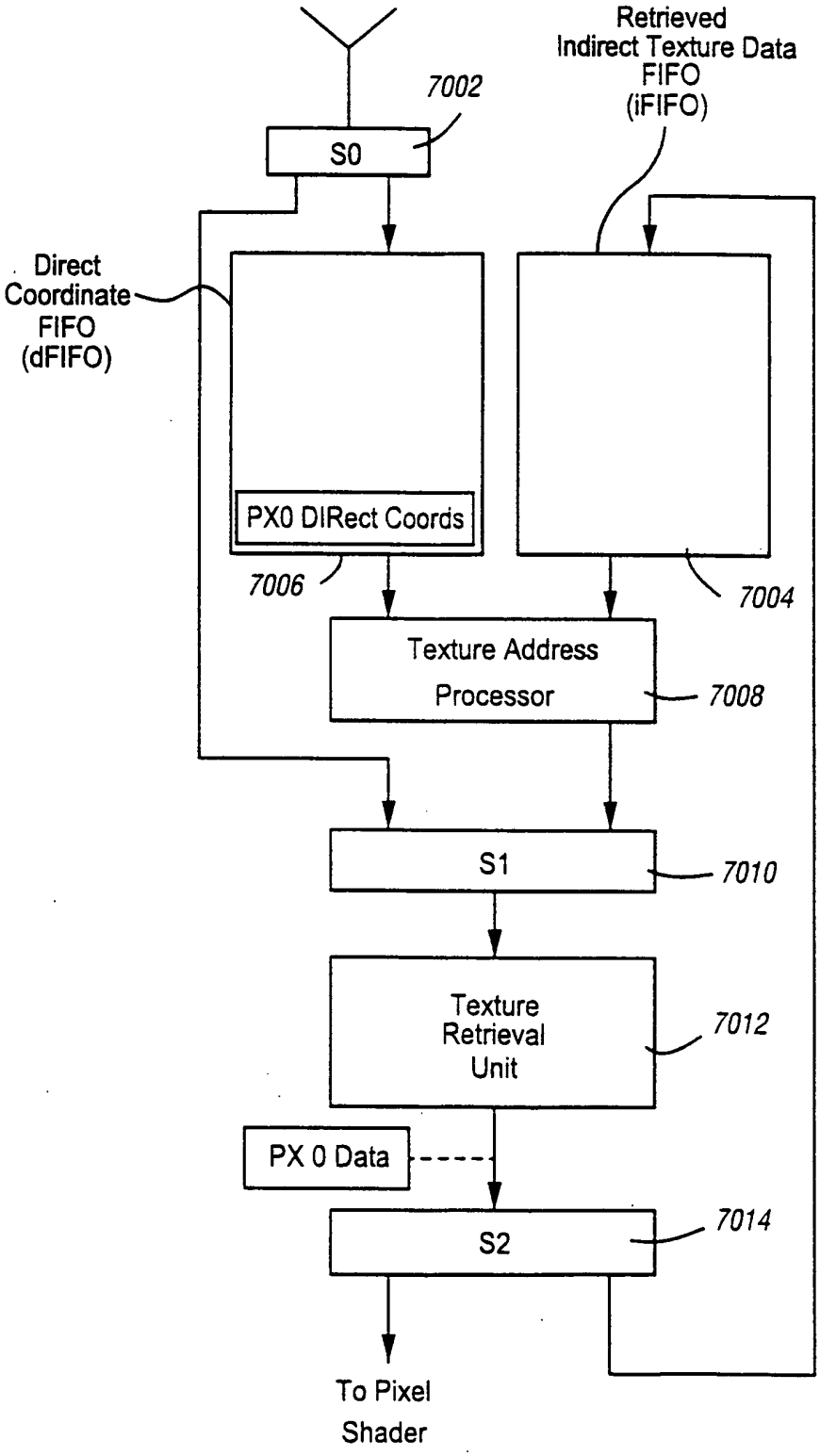


Fig. 10C

H/joy/723-849-Fig 10C.dwg

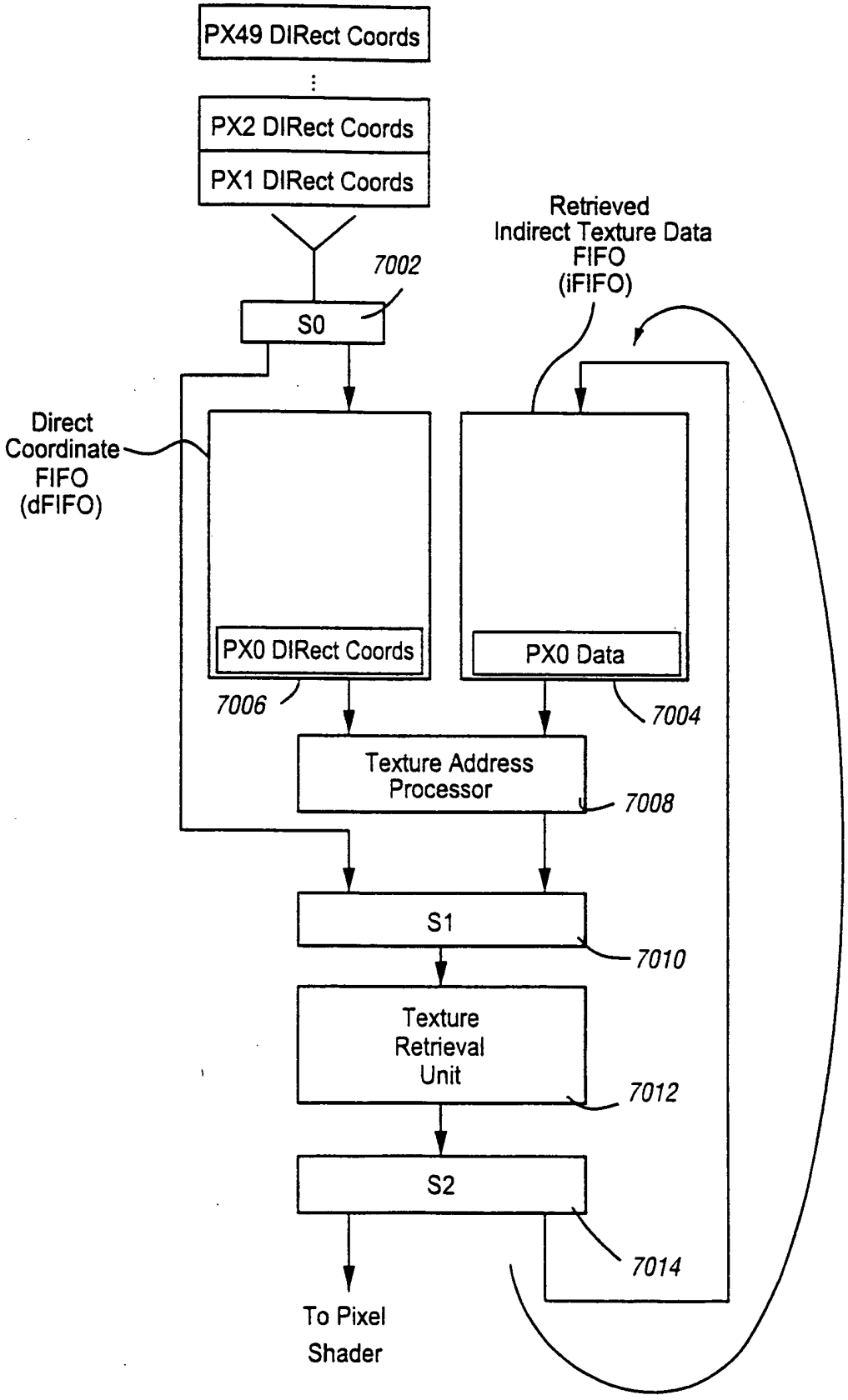


Fig. 10D

H/joy/723-849-Fig 10D.dwg

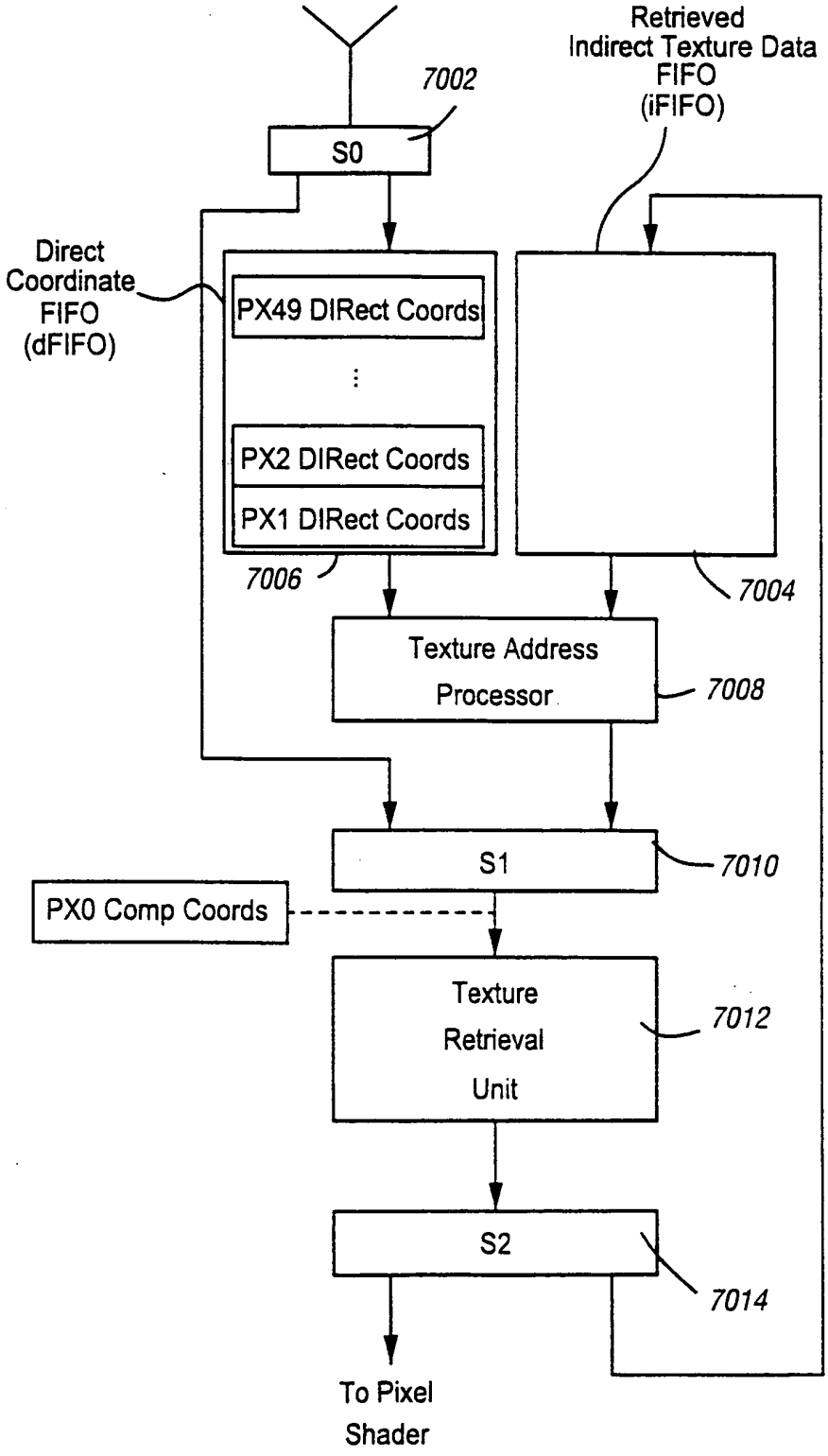


Fig. 10E

H/joy/723-849-Fig 10E.dwg

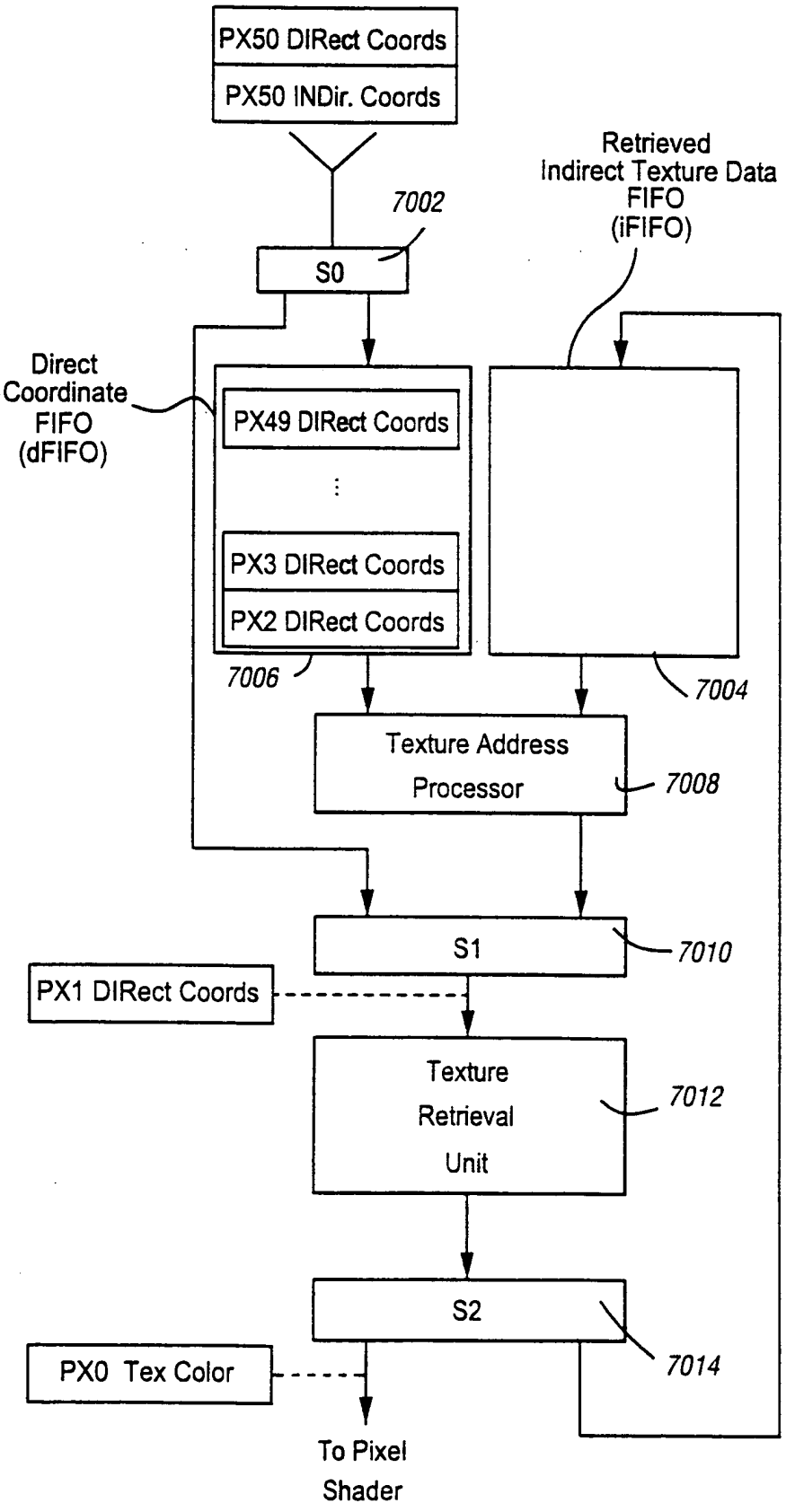


Fig. 10F

H/joy/723-849-Fig 10F.dwg

09/22/2003 08:52:26

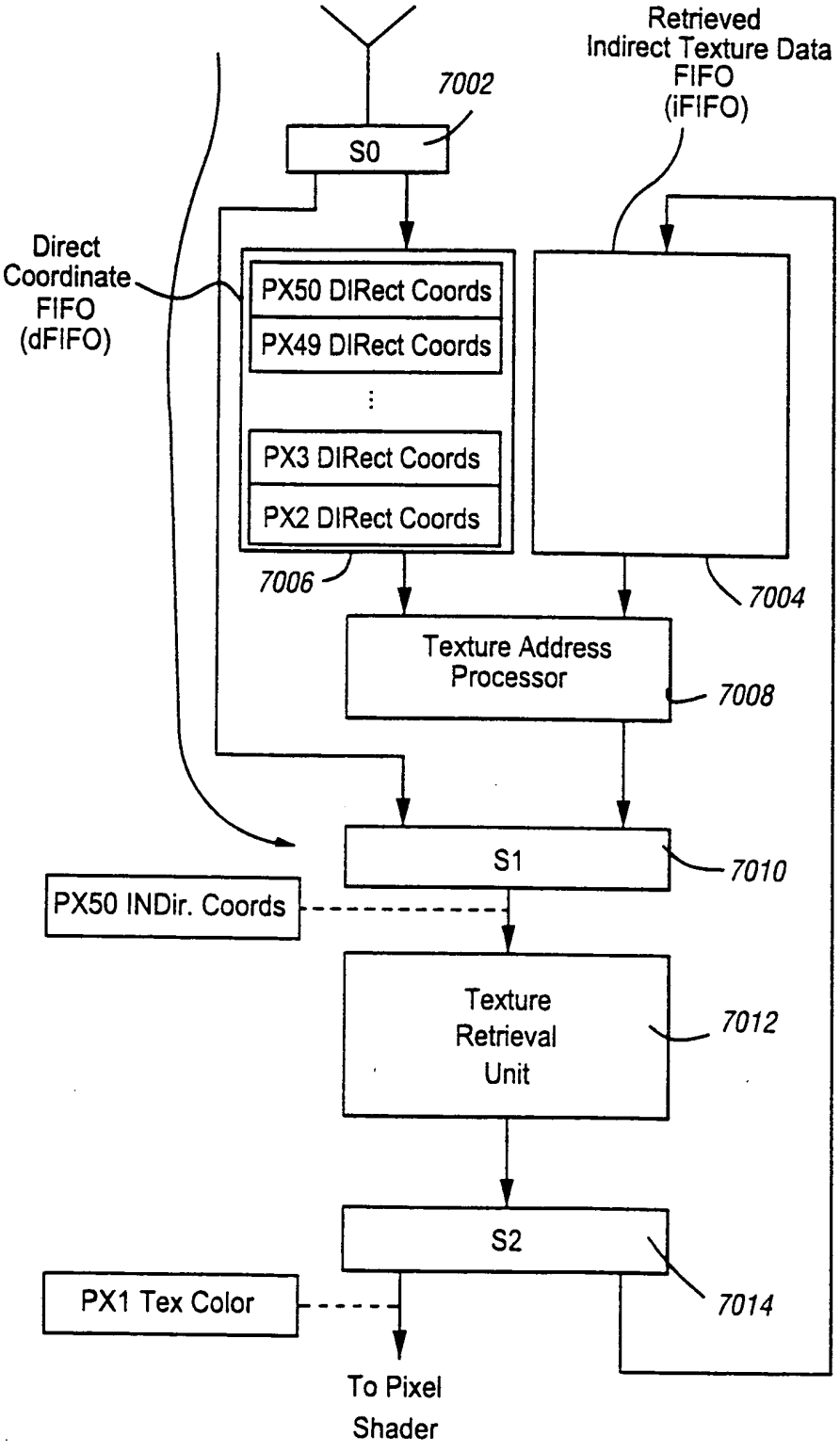


Fig. 10G

H/joy/723-849-Fig 10G.dwg

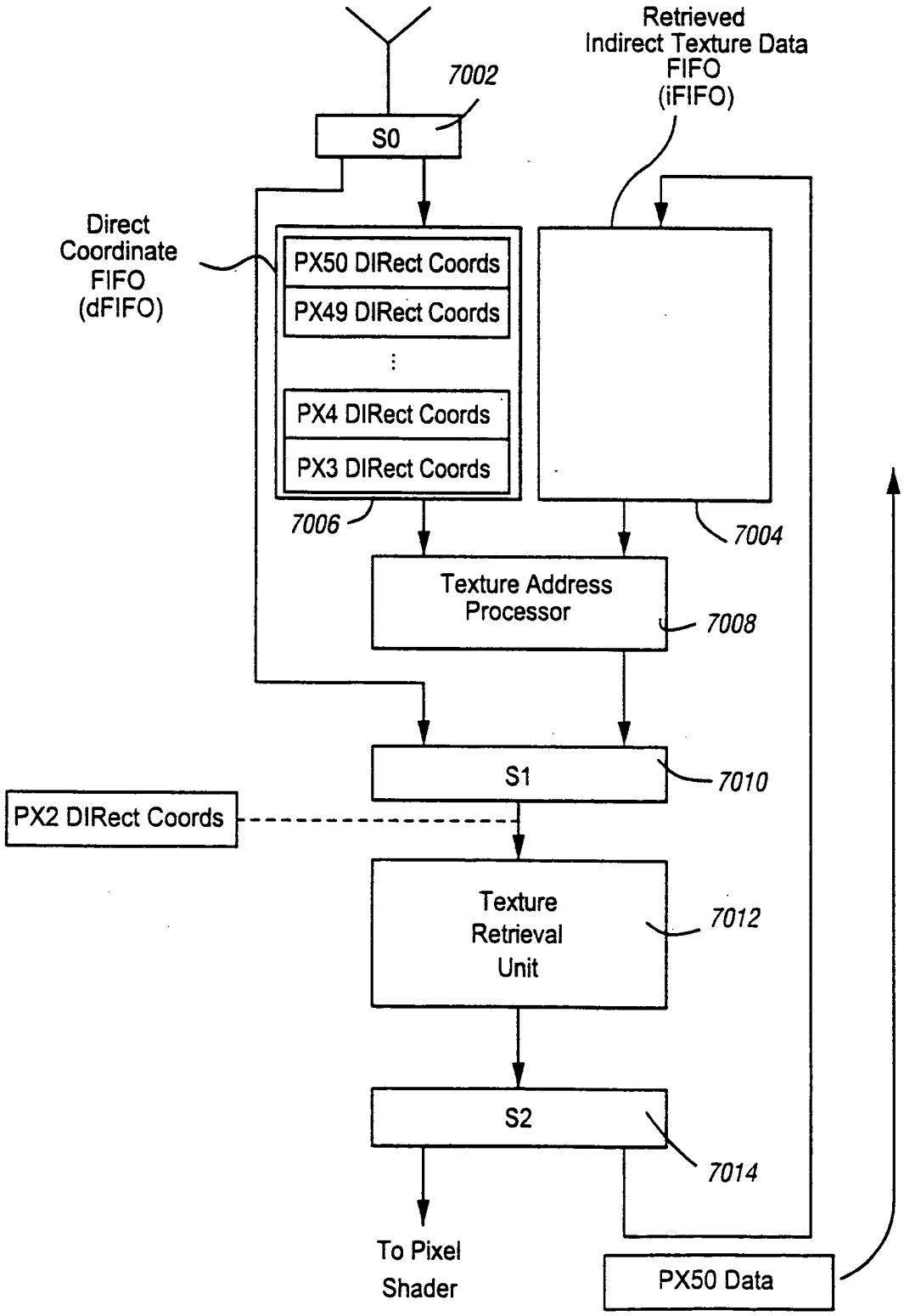


Fig. 10H

H/joy/723-849-Fig 10H.dwg

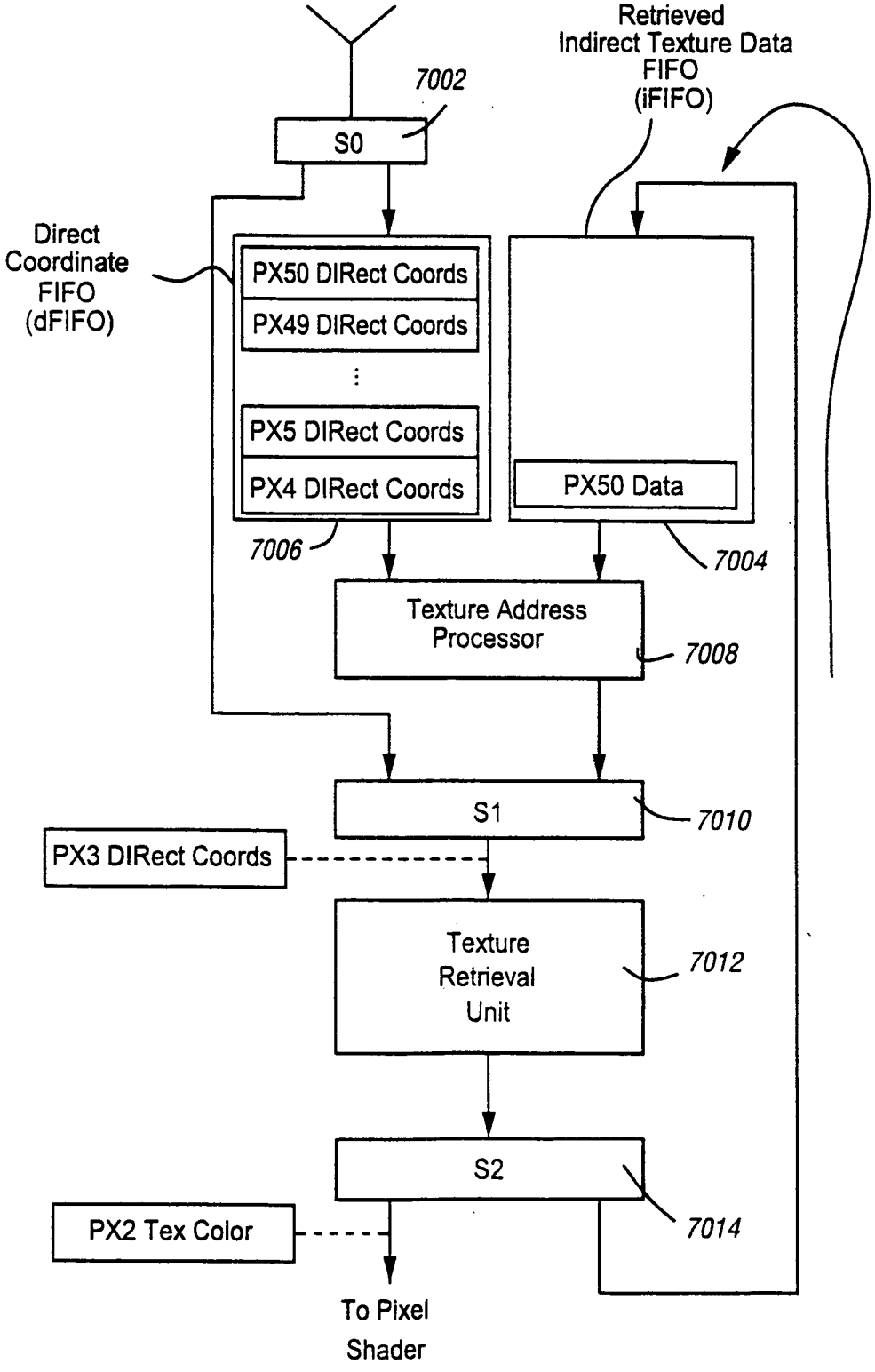


Fig. 10I

H/joy/723-849-Fig 10I.dwg

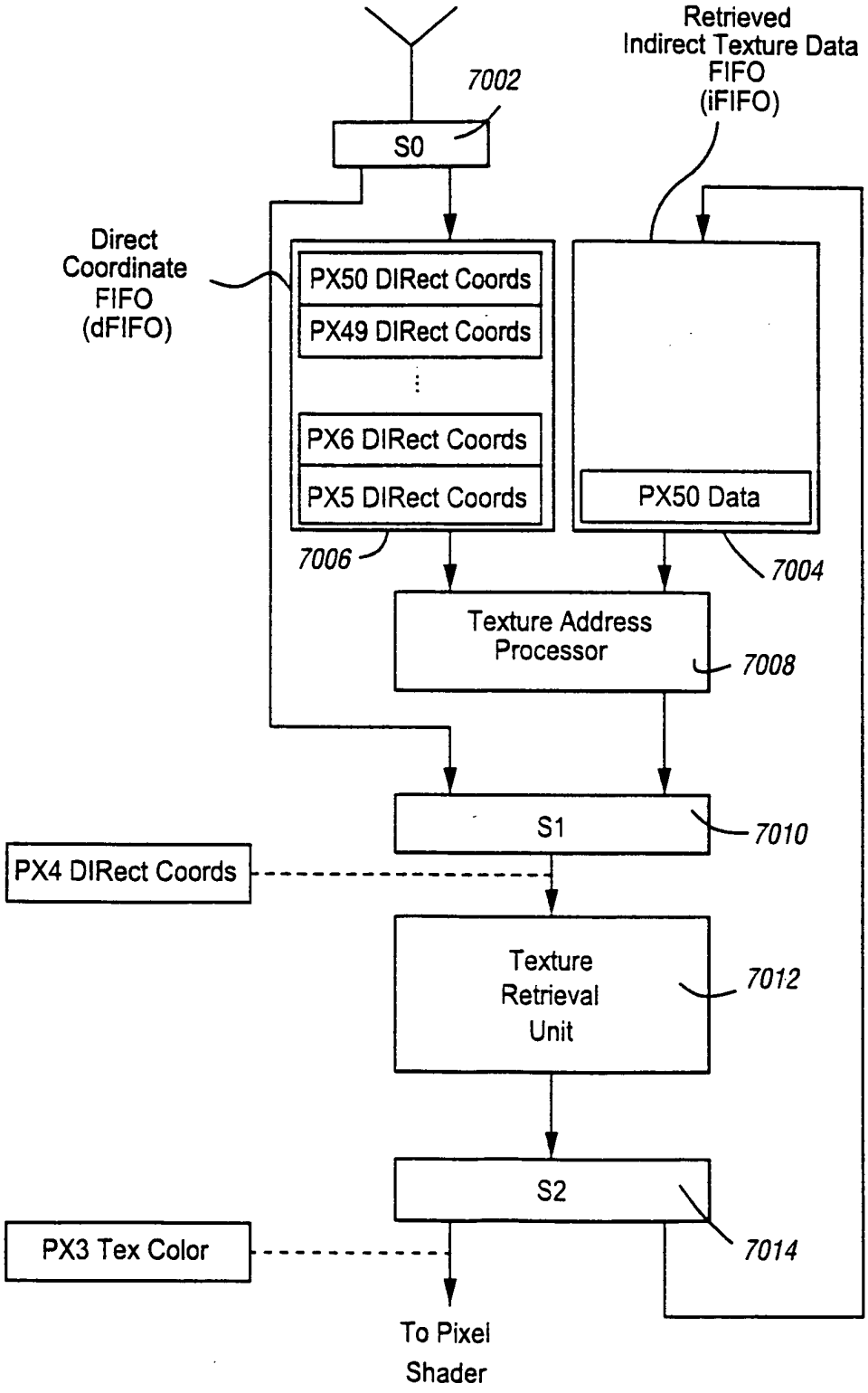


Fig. 10J

H/joy/723-849-Fig 10J.dwg

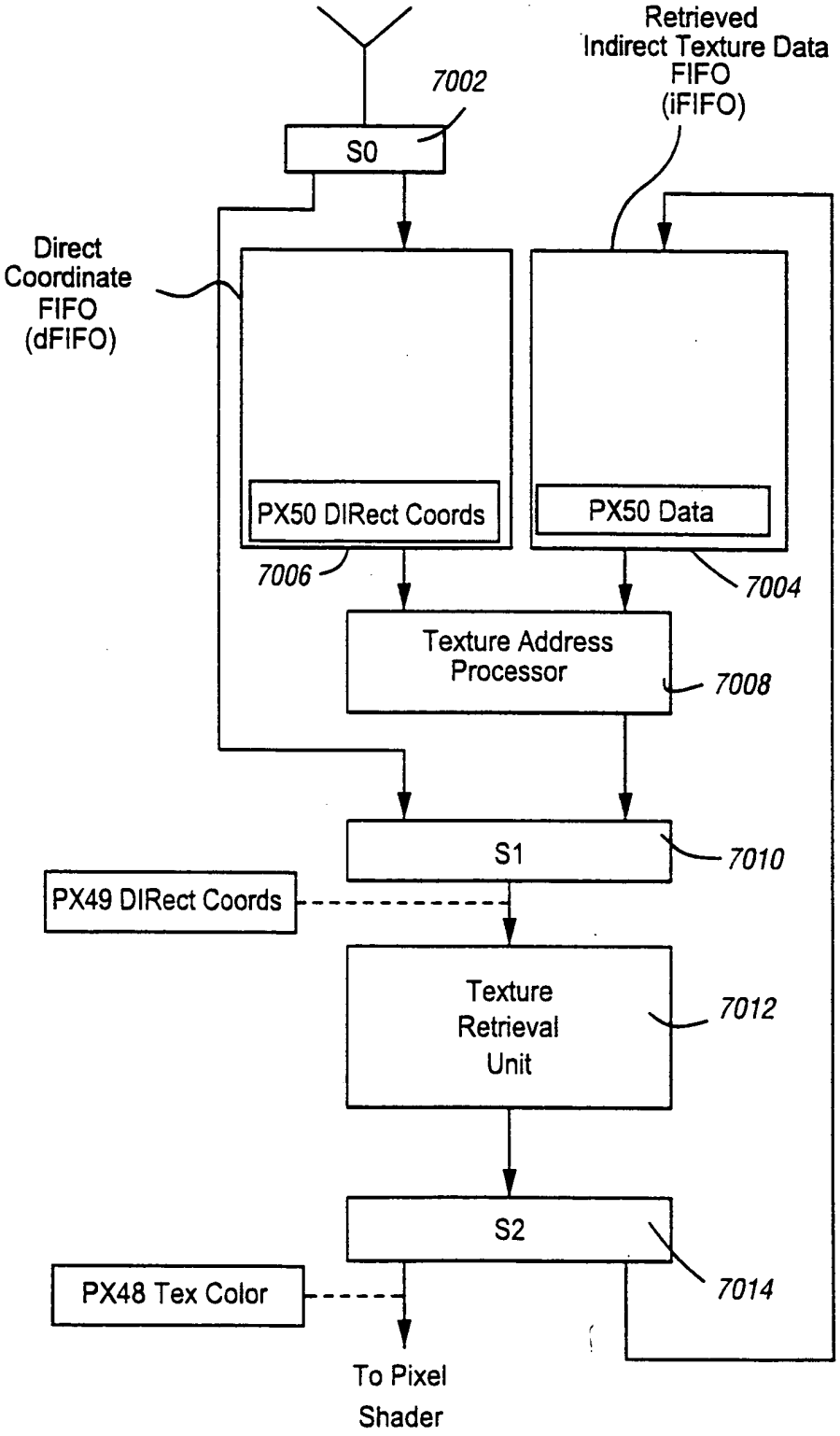


Fig. 10K

H/joy/723-849-Fig 10K.dwg

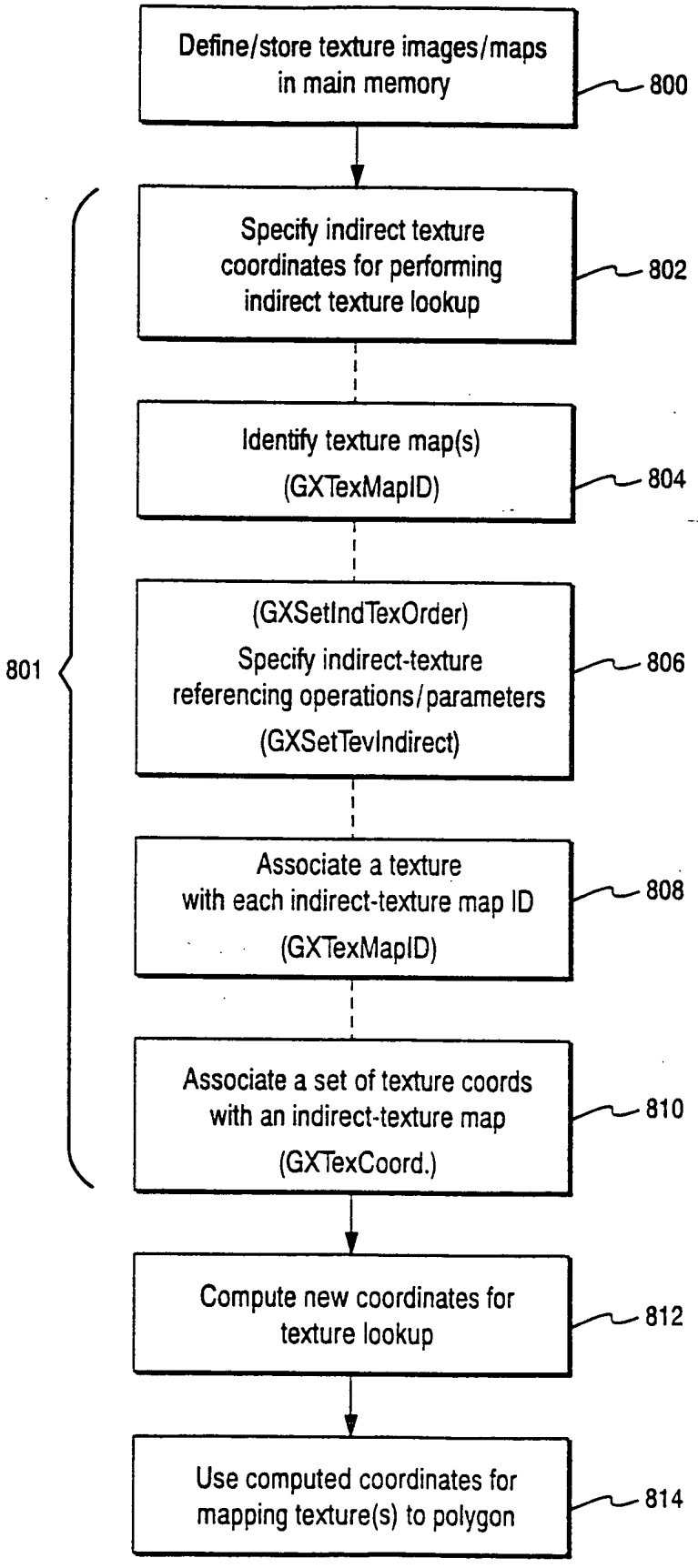

Define/store texture images/maps in main memory
800
Specify indirect texture coordinates for performing indirect texture lookup
802
Identify texture map(s) (GXTexMapID)
804
801
(GXSetIndTexOrder) Specify indirect-texture referencing operations/parameters (GXSetTevIndirect)
806
Associate a texture with each indirect-texture map ID (GXTexMapID)
808
Associate a set of texture coords with an indirect-texture map (GXTexCoord.)
810
Compute new coordinates for texture lookup
812
Use computed coordinates for mapping texture(s) to polygon
814

Fig. 11

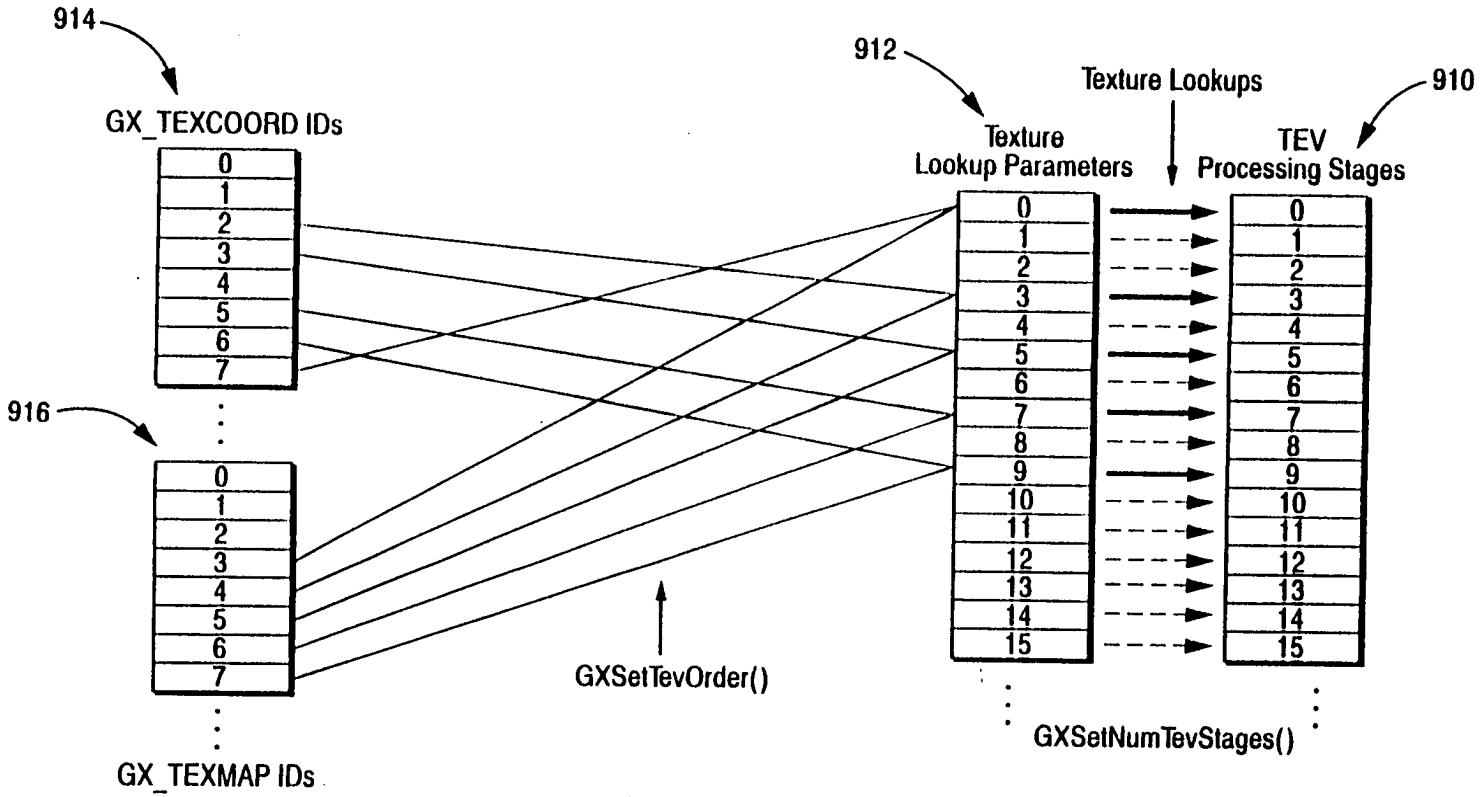


Fig. 12

REGULAR(NON-INDIRECT) TEXTURE PROCESSING

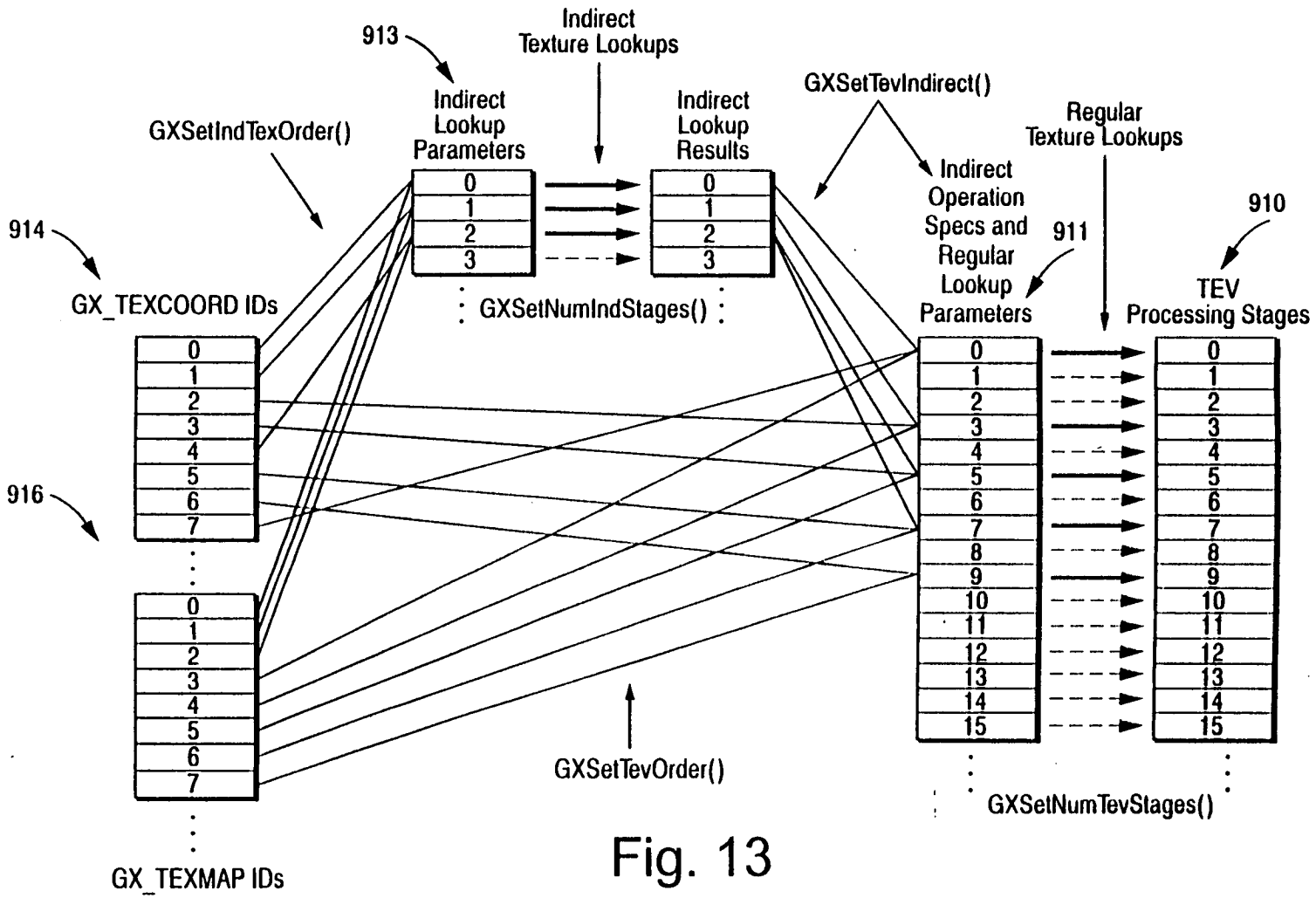


Fig. 13

REGULAR AND INDIRECT TEXTURE PROCESSING

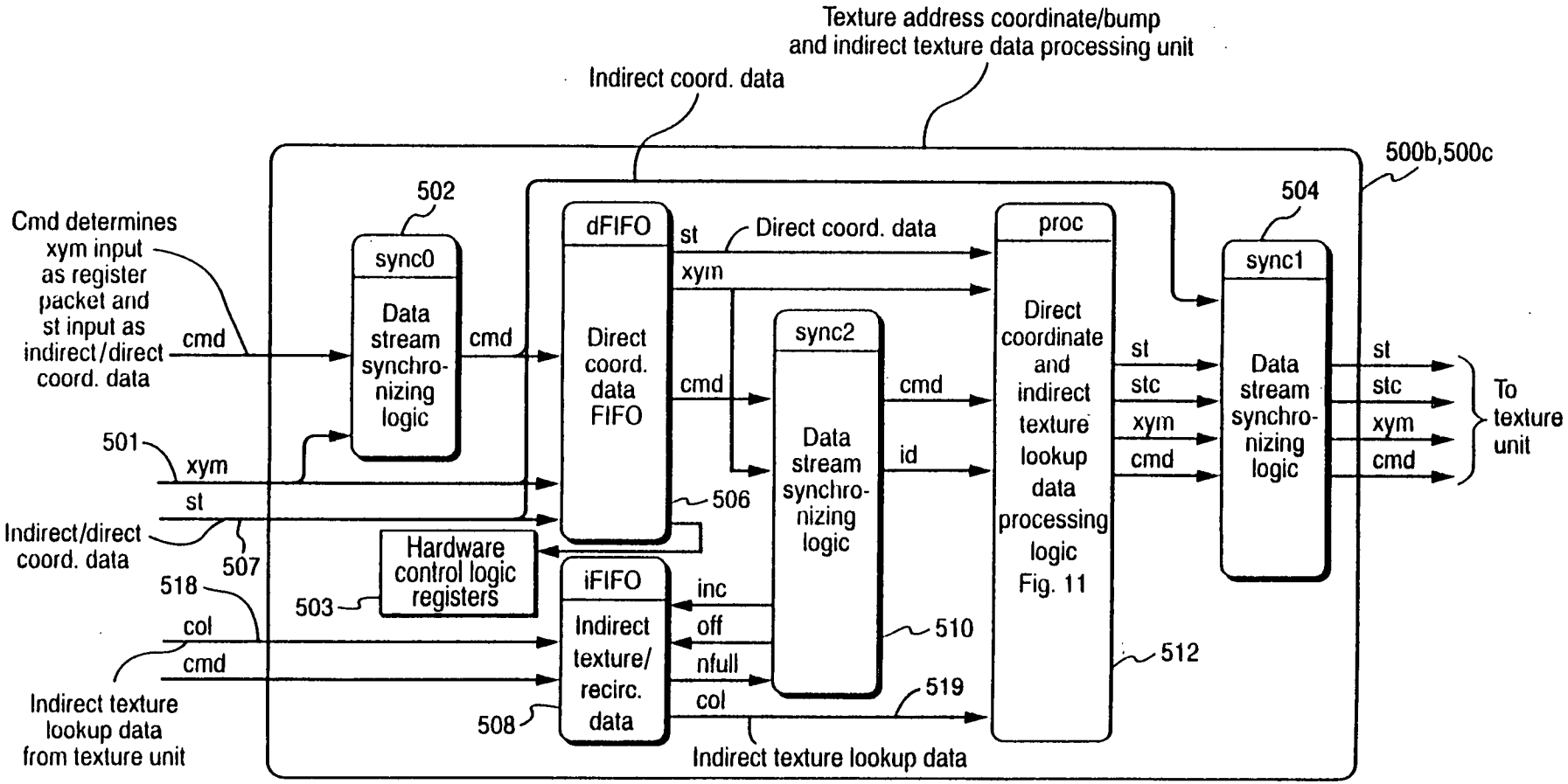


Fig. 14

EXAMPLE BUMP/TEXTURE COORDINATE PROCESSING UNIT

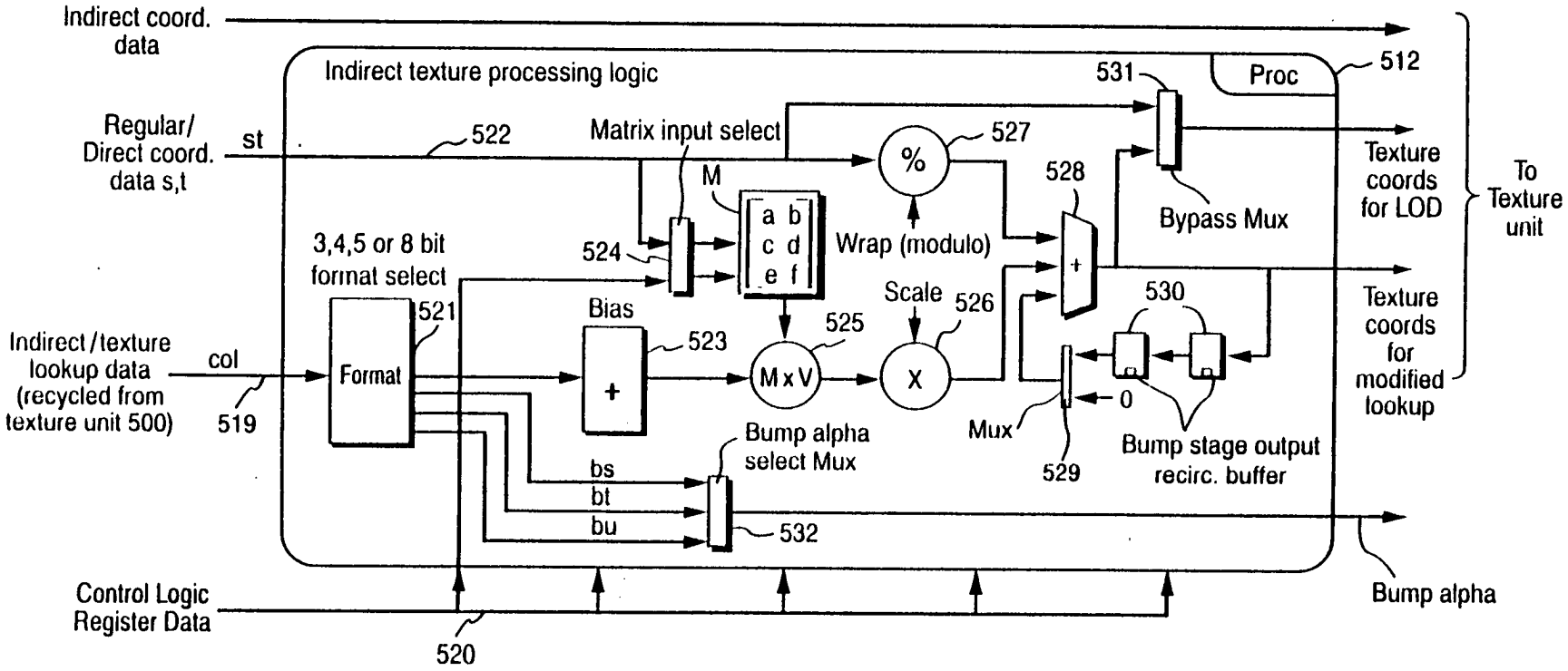


Fig. 15

EXAMPLE INDIRECT-TEXTURE LOOKUP DATA PROCESSING LOGIC

0003217 "19522760

$$\begin{pmatrix} s' \\ t' \end{pmatrix} = \overbrace{\begin{pmatrix} ma & mb \\ mc & md \\ me & mf \end{pmatrix}}^{M} \cdot \overbrace{\begin{pmatrix} s \\ t \\ u \end{pmatrix}}^{V}$$

Fig. 16A

EXAMPLE TEXTURE OFFSET MATRICES

Matrix A

$$\begin{pmatrix} s/256 & t/256 \\ 0 & 0 \\ 0 & 0 \end{pmatrix}$$

Matrix B

$$\begin{pmatrix} 0 & 0 \\ s/256 & t/256 \\ 0 & 0 \end{pmatrix}$$

Fig. 16B

EXAMPLE TEXTURE OFFSET MATRICES

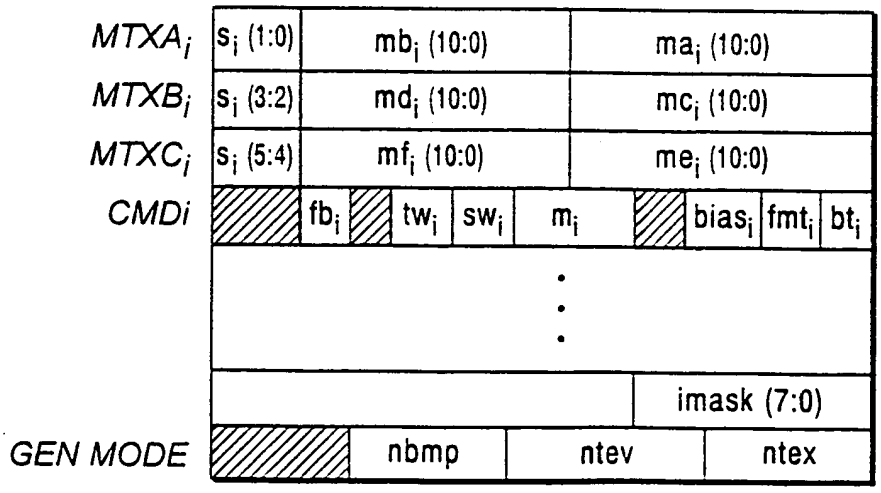


Fig. 17

EXAMPLE CONTROL LOGIC REGISTERS

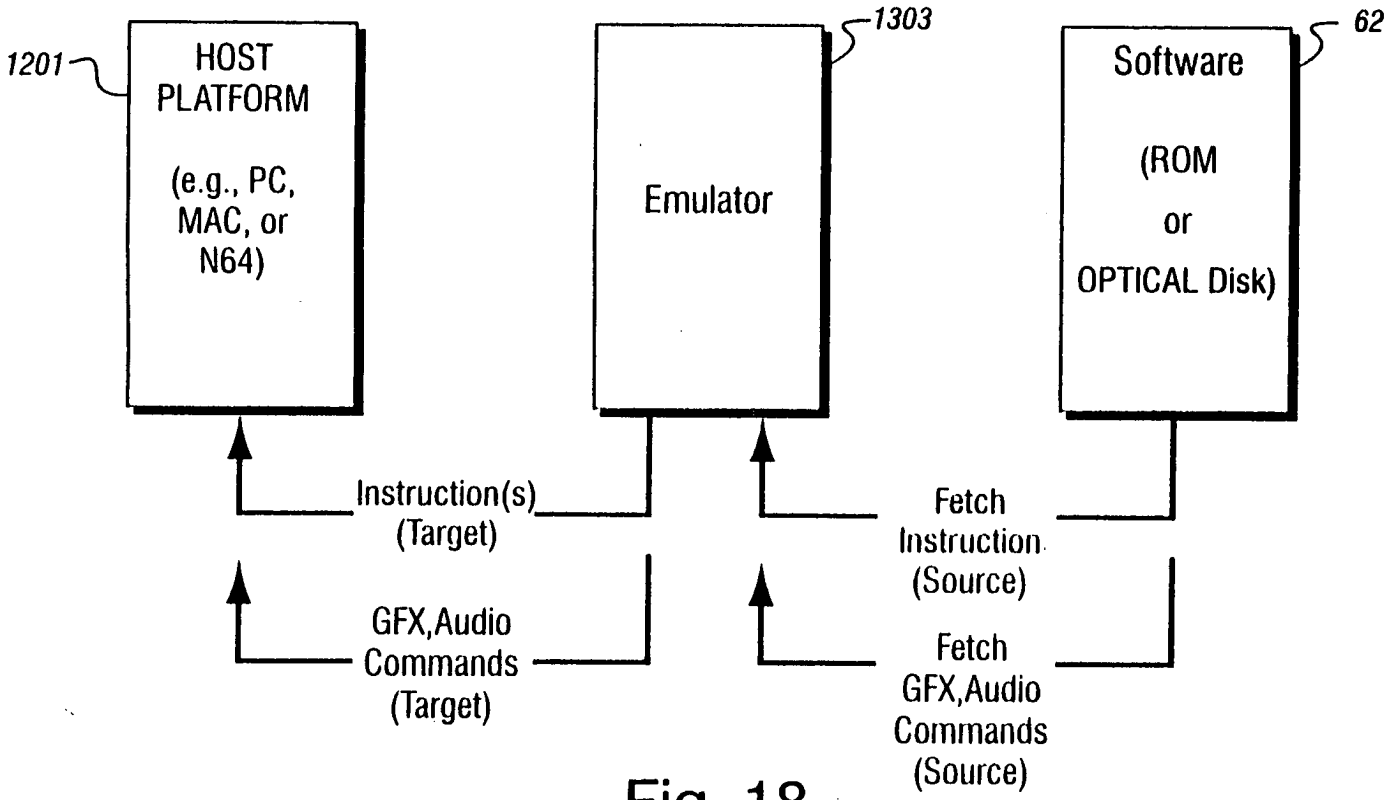

1201
HOST PLATFORM
(e.g., PC, MAC, or N64)
1303
Emulator
62
Software
(ROM or OPTICAL Disk)
Instruction(s) (Target)
GFX,Audio Commands (Target)
Fetch Instruction (Source)
Fetch GFX,Audio Commands (Source)

Fig. 18

0082TT "28E22260

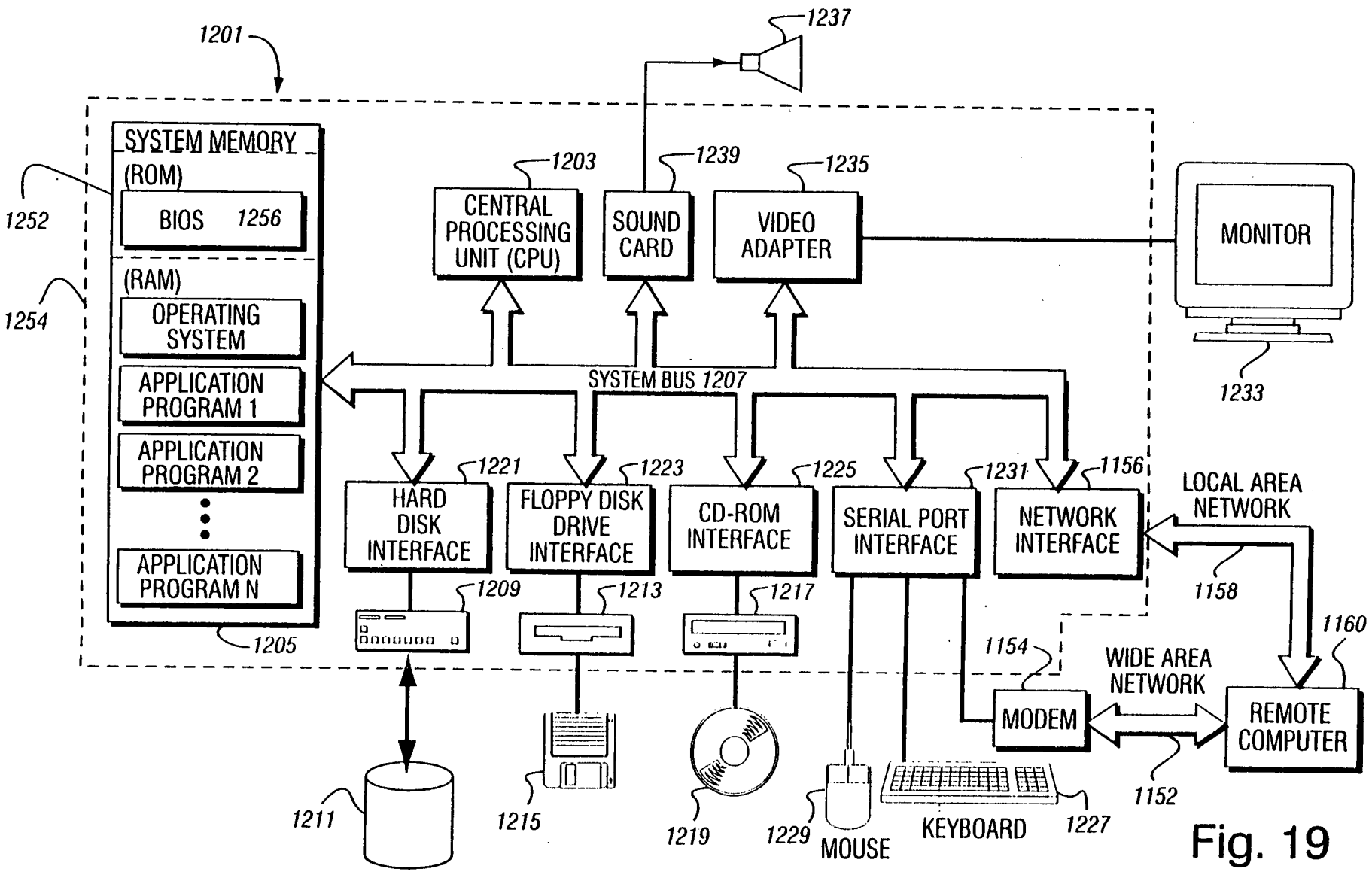


Fig. 19